```
Verifying   : 1:grub2-pc-2.06-2.amzn2.0.3.x86_64                          12/29
Verifying   : grubby-8.28-23.amzn2.0.2.x86_64                             13/29
Verifying   : kernel-4.14.243-185.433.amzn2.x86_64                        14/29
Verifying   : 1:grub2-tools-efi-2.06-2.amzn2.0.3.x86_64                   15/29
Verifying   : kernel-tools-4.14.243-185.433.amzn2.x86_64                  16/29
Verifying   : 1:grub2-common-2.06-2.amzn2.0.1.noarch                      17/29
Verifying   : 1:grub2-efi-x64-ec2-2.06-2.amzn2.0.1.x86_64                 18/29
Verifying   : ec2-utils-1.2-44.amzn2.noarch                               19/29
Verifying   : 1:grub2-tools-2.06-2.amzn2.0.1.x86_64                       20/29
Verifying   : 1:grub2-2.06-2.amzn2.0.1.x86_64                             21/29
Verifying   : systemtap-runtime-4.4-1.amzn2.0.1.x86_64                    22/29
Verifying   : 1:grub2-tools-minimal-2.06-2.amzn2.0.1.x86_64              23/29
Verifying   : curl-7.61.1-12.amzn2.0.4.x86_64                            24/29
Verifying   : 1:grub2-pc-2.06-2.amzn2.0.1.x86_64                          25/29
Verifying   : kernel-tools-4.14.238-182.422.amzn2.x86_64                 26/29
Verifying   : libcurl-7.61.1-12.amzn2.0.4.x86_64                         27/29
Verifying   : 1:grub2-pc-modules-2.06-2.amzn2.0.1.noarch                 28/29
Verifying   : grubby-8.28-23.amzn2.0.1.x86_64                            29/29

Installed:
  grub2.x86_64 1:2.06-2.amzn2.0.3              grub2-pc.x86_64 1:2.06-2.amzn2.0.3              grub2-tools.x86_64 1:2.06-2.amzn2.0.3
  grub2-tools-efi.x86_64 1:2.06-2.amzn2.0.3    grub2-tools-extra.x86_64 1:2.06-2.amzn2.0.3    grub2-tools-minimal.x86_64 1:2.06-2.amzn2.0.3
  kernel.x86_64 0:4.14.243-185.433.amzn2

Updated:
  curl.x86_64 0:7.76.1-4.amzn2.0.1             ec2-utils.noarch 0:1.2-45.amzn2               grub2-common.noarch 1:2.06-2.amzn2.0.3
  grub2-efi-x64-ec2.x86_64 1:2.06-2.amzn2.0.3  grub2-pc-modules.noarch 1:2.06-2.amzn2.0.3    grubby.x86_64 0:8.28-23.amzn2.0.2
  kernel-tools.x86_64 0:4.14.243-185.433.amzn2 libcurl.x86_64 0:7.76.1-4.amzn2.0.1           systemtap-runtime.x86_64 0:4.4-1.amzn2.0.2

Replaced:
  grub2.x86_64 1:2.06-2.amzn2.0.1                            grub2-tools.x86_64 1:2.06-2.amzn2.0.1

Complete!
[ec2-user@ip-172-31-15-239 ~]$
```

i-0422c37e6bd451731 (Docker)

Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

```
Total download size: 59 M
Installed size: 244 M
Downloading packages:
(1/5): libcgroup-0.41-21.amzn2.x86_64.rpm                                    |  66 kB  00:00:00
(2/5): pigz-2.3.4-1.amzn2.0.1.x86_64.rpm                                      |  81 kB  00:00:00
(3/5): containerd-1.4.6-2.amzn2.x86_64.rpm                                    |  24 MB  00:00:01
(4/5): docker-20.10.4-1.amzn2.x86_64.rpm                                      |  32 MB  00:00:01
(5/5): runc-1.0.0-1.amzn2.x86_64.rpm                                          | 3.3 MB  00:00:00
--------------------------------------------------------------------------------------------------
Total                                                                45 MB/s |  59 MB  00:00:01
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : runc-1.0.0-1.amzn2.x86_64                                                      1/5
  Installing : containerd-1.4.6-2.amzn2.x86_64                                                2/5
  Installing : libcgroup-0.41-21.amzn2.x86_64                                                 3/5
  Installing : pigz-2.3.4-1.amzn2.0.1.x86_64                                                  4/5
  Installing : docker-20.10.4-1.amzn2.x86_64                                                  5/5
  Verifying  : docker-20.10.4-1.amzn2.x86_64                                                  1/5
  Verifying  : pigz-2.3.4-1.amzn2.0.1.x86_64                                                  2/5
  Verifying  : libcgroup-0.41-21.amzn2.x86_64                                                 3/5
  Verifying  : containerd-1.4.6-2.amzn2.x86_64                                                4/5
  Verifying  : runc-1.0.0-1.amzn2.x86_64                                                      5/5

Installed:
  docker.x86_64 0:20.10.4-1.amzn2

Dependency Installed:
  containerd.x86_64 0:1.4.6-2.amzn2        libcgroup.x86_64 0:0.41-21.amzn2        pigz.x86_64 0:2.3.4-1.amzn2.0.1        runc.x86_64 0:1.0.0-1.amzn2

Complete!
[ec2-user@ip-172-31-15-239 ~]$
```

i-0422c37e6bd451731 (Docker)

Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

Type here to search

29°C Light rain   ENG 20:17 17-08-2021

```
Complete!
[ec2-user@ip-172-31-15-239 ~]$ sudo su
[root@ip-172-31-15-239 ec2-user]# service docker start
Redirecting to /bin/systemctl start docker.service
[root@ip-172-31-15-239 ec2-user]# 
```
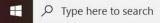
(Docker)

```
import        Import the contents from a tarball to create a filesystem image
info          Display system-wide information
inspect       Return low-level information on Docker objects
kill          Kill one or more running containers
load          Load an image from a tar archive or STDIN
login         Log in to a Docker registry
logout        Log out from a Docker registry
logs          Fetch the logs of a container
pause         Pause all processes within one or more containers
port          List port mappings or a specific mapping for the container
ps            List containers
pull          Pull an image or a repository from a registry
push          Push an image or a repository to a registry
rename        Rename a container
restart       Restart one or more containers
rm            Remove one or more containers
rmi           Remove one or more images
run           Run a command in a new container
save          Save one or more images to a tar archive (streamed to STDOUT by default)
search        Search the Docker Hub for images
start         Start one or more stopped containers
stats         Display a live stream of container(s) resource usage statistics
stop          Stop one or more running containers
tag           Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE
top           Display the running processes of a container
unpause       Unpause all processes within one or more containers
update        Update configuration of one or more containers
version       Show the Docker version information
wait          Block until one or more containers stop, then print their exit codes

Run 'docker COMMAND --help' for more information on a command.

To get more help with docker, check out our guides at https://docs.docker.com/go/guides/
[root@ip-172-31-15-239 ec2-user]#
```

i-0422c37e6bd451731 (Docker)

Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

Type here to search   29°C Light rain   ENG   20:20 17-08-2021

```
To get more help with docker, check out our guides at
[root@ip-172-31-15-239 ec2-user]# docker --version
Docker version 20.10.4, build d3cb89e
[root@ip-172-31-15-239 ec2-user]#
```
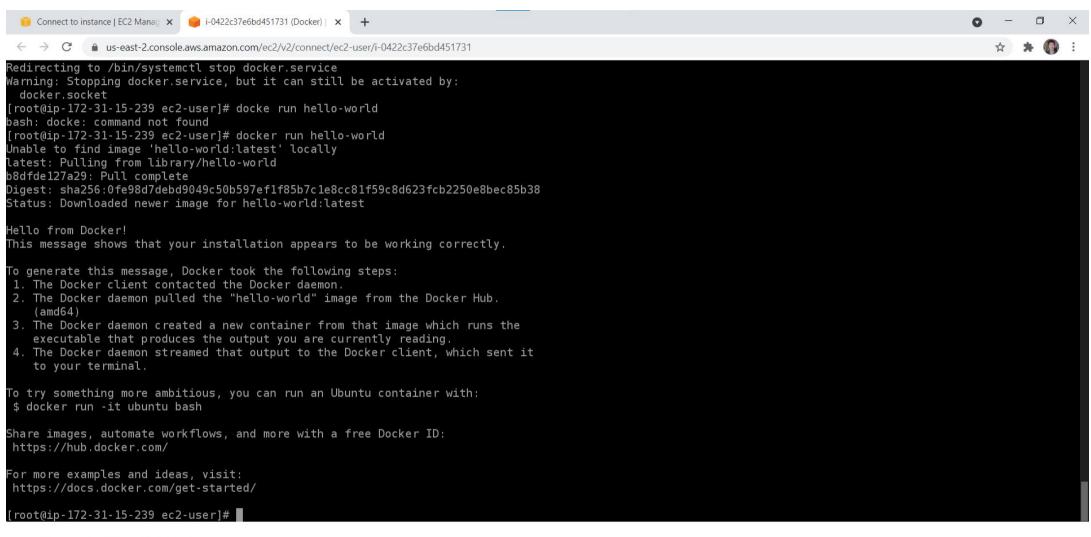
```
version       Show the Docker version information
wait          Block until one or more containers stop, then print their exit codes

Run 'docker COMMAND --help' for more information on a command.

To get more help with docker, check out our guides at https://docs.docker.com/go/guides/
[root@ip-172-31-15-239 ec2-user]# docker --version
Docker version 20.10.4, build d3cb89e
[root@ip-172-31-15-239 ec2-user]# service docker status
Redirecting to /bin/systemctl status docker.service
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; vendor preset: disabled)
   Active: active (running) since Tue 2021-08-17 14:48:24 UTC; 4min 39s ago
     Docs: https://docs.docker.com
  Process: 7982 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code=exited, status=0/SUCCESS)
  Process: 7972 ExecStartPre=/bin/mkdir -p /run/docker (code=exited, status=0/SUCCESS)
 Main PID: 7989 (dockerd)
    Tasks: 7
   Memory: 37.6M
   CGroup: /system.slice/docker.service
           └─7989 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=1024:4096

Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.470570189Z" level=info msg="scheme \"unix\" not ...e=grpc
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.470839075Z" level=info msg="ccResolverWrapper: s...e=grpc
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.471199094Z" level=info msg="ClientConn switching...e=grpc
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.519921256Z" level=info msg="Loading containers: start."
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.701639249Z" level=info msg="Default bridge (dock...dress"
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.758436947Z" level=info msg="Loading containers: done."
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.776763187Z" level=info msg="Docker daemon" commi...0.10.4
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.777202115Z" level=info msg="Daemon has completed...ation"
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal systemd[1]: Started Docker Application Container Engine.
Aug 17 14:48:24 ip-172-31-15-239.us-east-2.compute.internal dockerd[7989]: time="2021-08-17T14:48:24.799720961Z" level=info msg="API listen on /run/d....sock"
Hint: Some lines were ellipsized, use -l to show in full.
[root@ip-172-31-15-239 ec2-user]#
```

i-0422c37e6bd451731 (Docker)

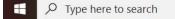Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

```
[root@ip-172-31-15-239 ec2-user]# service docker stop
Redirecting to /bin/systemctl stop docker.service
Warning: Stopping docker.service, but it can still be activated by:
  docker.socket
[root@ip-172-31-15-239 ec2-user]#
```

```
[root@ip-172-31-15-239 ec2-user]# docker run -it ubuntu bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
16ec32c2132b: Pull complete
Digest: sha256:82becede498899ec668628e7cb0ad87b6e1c371cb8a1e597d83a47fac21d6af3
Status: Downloaded newer image for ubuntu:latest
oot@e667980594d4: /root@e667980594d4:/#
```

```
  to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

[root@ip-172-31-15-239 ec2-user]# docker run -it ubuntu bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
16ec32c2132b: Pull complete
Digest: sha256:82becede498899ec668628e7cb0ad87b6e1c371cb8a1e597d83a47fac21d6af3
Status: Downloaded newer image for ubuntu:latest
oot@e667980594d4: /root@e667980594d4:/# exit
exit
[root@ip-172-31-15-239 ec2-user]# docker volume create
77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
[root@ip-172-31-15-239 ec2-user]# docker inspect 77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
[
    {
        "CreatedAt": "2021-08-17T14:58:38Z",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710/_data",
        "Name": "77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710",
        "Options": {},
        "Scope": "local"
    }
]
[root@ip-172-31-15-239 ec2-user]#
```

i-0422c37e6bd451731 (Docker)

Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

```
exit
[root@ip-172-31-15-239 ec2-user]# docker volume create
77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
[root@ip-172-31-15-239 ec2-user]# docker inspect 77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
[
    {
        "CreatedAt": "2021-08-17T14:58:38Z",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710/_data",
        "Name": "77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710",
        "Options": {},
        "Scope": "local"
    }
]
[root@ip-172-31-15-239 ec2-user]# docker volume 77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710

Usage:  docker volume COMMAND

Manage volumes

Commands:
  create      Create a volume
  inspect     Display detailed information on one or more volumes
  ls          List volumes
  prune       Remove all unused local volumes
  rm          Remove one or more volumes

Run 'docker volume COMMAND --help' for more information on a command.
[root@ip-172-31-15-239 ec2-user]# docker volume rm  77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
77295ee451a237bc0304aa64f81ffa989d3952b71e0bbd7dd085d4650a935710
[root@ip-172-31-15-239 ec2-user]# volume ls
bash: volume: command not found
[root@ip-172-31-15-239 ec2-user]#
```

i-0422c37e6bd451731 (Docker)

Public IPs: 18.220.92.48   Private IPs: 172.31.15.239

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